IJREB

ISSN 2321-743X
International Journal of Research in
Engineering and Bioscience
Volume 1 (Special Issue 1)
Journal home page: www.ijreb.org

BIOCHEMICAL PROFILE AND POTENTIAL MEDICINAL USE OF *IPOMEA BILOBA* PRESENT IN THE WESTERN COASTAL LINE OF ARABIAN SEA AT SOUTH INDIA

S.T.Gopukumar[1*], V.N.Ariharan[2], and S.T.Sharmila[3]

[1]Department of Nanotechnology, Noorul Islam University, Kumaracoil, India
[2]Department of Biomedical Engineering, Noorul Islam University, Kumaracoil, India
[3]Department of Biochemistry, M.G.R Arts and Science College, Hosur, India

Corresponding author E-mail id: stgopukumar@rediffmail.com

ABSTRACT

Ipomea biloba is an aquatic perennial runner plant used as a medical herb for various diseases. The plant were collected and extracted for biochemical compound isolation. In this present study the medicinal uses and biochemical parameters such as enzymes, amino acids, antioxidants, chlorophyll content, calcium, iron and total phenol present in the plant by using different methods.

Keywords: *Ipomea biloba*, amino acids, sap, erosion, enzymes, minerals

INTRODUCTION

In India, large diversity of plant species is available; of these species some are either beneficial or harmful. Fruits and vegetables generally form indispensable constituents of human diets supplying the body with minerals, vitamins and certain hormone precursors, in addition to small amounts of protein and energy. The plant *Ipomea biloba* belongs to the plant family Convoluvulacea, a moving glory family. It is a semi-aquatic tropical plant. In Tamil it was known as "Kadamba Valli". *I.biloba* was mainly located on the west coast of India, bounded by Arabian Sea. It is established worldwide on many tropical beaches including those of Australia and the Caribbean [1][2]. The predominant soils in the district are laetrile soils. The plant size may be up to 100 feet long.

It grows well on nutrient-poor, moist, sandy, or calcareous soils [3]. The growth of *I.biloba* was extensive on the sand dunes near the shore "cyanodon dactylon" a gramiane member was also found growing luxuriously along *I.biloba*. This type of plant species are normally seen under the coastal areas of Arabian Sea. The leaves of the plants are greenish in color [4]. The flower of *I.biloba* is pink in nature. The plant produces adventitious roots at the nodes and run horizontally rather than vertically [5]. It does not tolerate prolonged frost conditions. It provides habitat for many diverse animal species including gopher tortoise, the endangered beach mice, scrub jay and the threatened kestrel.

MATERIALS AND METHODS

I.biloba was collected from west costal line of Manavalakurichi village,

Kanyakumari district, Tamilnadu, India. The leaves were separated and cleaned well. Cleaned leaves were then dried under shade. The drying process was continued until all the water molecules evaporated and leaves became well dried for grinding. The leaves were finely powdered and extracted with acetone solvent using Soxhlet apparatus.

In this study the presence of Carbohydrates and Pentose was analyzed by using Molisch test and Bial's test method. The presence of Tryptophan and Histidine were analyzed by using Hopkins cole and Pauly's method. The estimation of Protein was done by Biuret method. Total Phenol was estimated by using Bray and Thorpe method. The minerals such as iron and calcium were estimated using Clark & Coltip method and Dipyridyl method. The enzymes amylase and catalase were estimated by using Caraway and Sodium Perborate method. The Estimation of Lipid was done by using Bilgh's & Dyes method.

RESULTS

I.biloba is a plant with an immense medicinal property in it. The plant plays a vital role for both human as well as environment. The sap from the succulent leaves has been used as a first-aid to treat jelly fish stings. Both leaves and stems exude a watery white sap that may be a chemical protection against insect pests and grazing animals. The plant also serves nature by preventing soil erosion. The plant also provides Food & Shelter for some sea insects and animals. The qualitative and quantitative screeing of the I.biloba were carried out and the results were tabulated in table 1 and table 2 respectively.

Table: 1 Qualitative biochemical screening of *I.biloba*

S.No	Compounds	Inference
1	Carbohydrates	+
2	Pentose	+
3	Tryptophan	+
4	Histidine	+

Table: 2 Quantitative biochemical screening of *I.biloba*

	Compounds	Contents
1	Protein (0.2ml)	0.357g/dl
2	Protein (0.5ml)	0.4286g/dl
3	Total Phenol	920µg/dl
4	Iron	320µg/dl
5	Calcium	10mg/dl
6	Amylase	137 caraways
7	Catalase	4.329×10^{-4} µmol/min
8	Lipid	82.39g

REFERENCES

1. Barnett, Michael R., and David Crewz, editors. 1997. Common Coastal Plants in Florida: A Guide

to Planting and Maintenance, University Press of Florida, FL
2. Nelson Gil. 2003. Florida's Best Native Landscape Plants: 200 Readily Available Species for Homeowners and Professionals. University Press of Florida, Gainesville, Florida
3. Priti Tagde , Farukh Khan, Bhushan Gandhare. In vitro antioxidant activity of ipoema biloba. International Journal of Phytopharmacy 2011 1(2) P50-54
4. Kandukuri Vasu et al., Biomolecular and phytochemical analyses of three aquatic angiosperms. African Journal of Microbiology Research 2009, 3(8) pp. 418-421
5. K. Vijaya bat, M. L. Magoon and R. Krishnan. Cytological And Morphological Studies Of Diploid And Tetraploid Species Of Ipomoea Biloba. Japan. J. Genetics 1969 44(5): 329-338